



KENNESAW STATE
UNIVERSITY

SYLLABUS

COLLEGE OF COMPUTING AND SOFTWARE ENGINEERING
DEPARTMENT OF SOFTWARE ENGINEERING AND GAME DESIGN
SWE 3643: SOFTWARE TESTING AND QUALITY ASSURANCE
FALL, 2024

Course Information

Classroom/In Person, Atrium, room 151, Mon/Wed 6:30pm till 7:45pm
Monday August 12th through Monday December 2, 2024

06:30 PM - 07:45 PM

Type: Lecture **Building:** Atrium Building **Room:** 151 **Start Date:** 08/12/2024 **End Date:** 12/09/2024

Instructor Information

Name: Jeff Adkisson

Email: JAdkiss1@Kennesaw.edu

Office Location: Available after almost all lectures (adjunct, no office)

Preferred method of communication: In person or via email (*not D2L mail*)

Course Description

This course will show how software quality assurance and configuration management is performed and how software process improvement is maintained in order to assure the highest possible quality. Topics include software process metrics and their use in QA, testing approaches, methods and techniques. Development of QA plans, reviews, inspections and audits will be done. Configuration control boards and methods for software process improvement is discussed.

Prerequisites: SWE 3313 Introduction to Software Engineering

Class: 3 Hours. **Lab:** 0 Hours. **Credit:** 3 Hours

Course Materials

Textbook (required): The textbook is freely available online at: <https://go.oreilly.com/kennesaw-state-university/library/view/software-testing-principles/9788177581218/>

Should you wish to purchase a printed copy of the textbook, here is the information:

Software Testing Principles and Practices (1st Edition) Srinivasan Desikan, Ramesh Gopalaswamy (Author). Pearson. ISBN-13: 978-8177581218, ISBN-10: 817758121X.

Downloads from D2L: Other electronic resources as made available by the instructor.

Technology requirements: To be discussed during the selection of the course project.

Learning Outcomes

By the end of this course, you will be able to:

1. Demonstrate an understanding of the notion of quality and the definitions of quality.
2. Demonstrate an understanding of setting quality goals, measuring techniques, and analyzing product and process quality.
3. Develop test plans, test processes, test scenarios, and test cases to achieve the quality goal.
4. Use a range of techniques to achieve the quality goals for software product through:
 - a. inspections/reviews
 - b. black box/white box testing techniques
 - c. unit, integration, system and regression testing

Software engineering requires a lifetime of learning after college to be competitive in the marketplace and remain relevant. A goal of this course is to help you develop the confidence that you can learn how to learn new techniques and information in a timely fashion and apply them in at a professional level. You will be assigned project work in this course where you must work out complex problems on your own requiring you to perform research, trial-and-error, and other problem-solving techniques.

Course Requirements and Assignments

This course involves the following components:

- *Readings* – In each learning module, you will read assigned readings related to testing and quality assurance. Assigned readings will support your completion of the quizzes and homework assignments. Readings are not graded. I recommend you do the readings, but that is your decision.
- *Videos* – you will be provided with various online lectures and tutorials that you are expected to review alongside the readings.
- *Homework* – you will have several homework assignments. Homework is not graded. It is to help you practice the concepts and techniques covered in the course. I will give out a homework key after each assignment and cover the homework assignment in the lecture. I recommend that you do the homework assignments, but that is your decision.
- *Quizzes* – Each module contains a online quiz to test your understanding of basic concepts. Each quiz is worth 2% of your final grade. Quizzes cannot be performed late. Make sure you regularly watch the D2L calendar for quizzes... every semester people forget them and wish they had that 2% at the end.
- *Exams* – There is an online midterm and an optional online final exam.
- *Project* – A semester project will be used to evaluate your understanding and ability to use the learned concepts. The project is worth half of your semester grade.

Evaluation and Grading Policies

10 Quizzes (2% each)	20%
Mid-term (online, open book)	20%
Project	50%
Final Exam (optional, online)	10%

Please refer to D2L for a detailed description of individual assignments and deliverables.

Grade Rounding:

I will calculate grades to 2 decimal places. Rounding will occur at the 3rd decimal position. For example:

- 89.984 becomes 89.98
- 89.985 becomes 89.99

- 89.994 becomes 89.99
- 89.995 becomes 90.0

Grade Components

Quizzes

You will be required to take a quiz for every learning module. Quizzes are open book, open notes, open resources. Pay attention to quiz due dates. They will not be re-opened.

Exams

There are two exams. Both use the Respondus lockdown browser. Make sure you have Respondus installed and operational before you get started.

The final exam is *optional*.

- If you do not take the final exam, your final exam score will be set to your class average.
- If you take the final and exceed your current average, you will receive the higher score.
- If you take the final and do not exceed your current average, your final exam score will be set to your class average (same as not taking it).

There is no risk taking the final exam. Before taking the final, you need to do the math to determine whether it can lift your score to the next higher grade. Otherwise, it is a waste of your time. Every semester someone with an A average unnecessarily takes the final... it never makes sense to me.

Project

You will produce a project this semester. You will be given all the parameters and requirements of the project in D2L and [GitHub](#). You can work alone or in a team of two (no more). If you work alone, you are responsible for all the work. If you work with a partner, you and the partner share the same grade, even if one of the partners does not carry out their part of the project or your partner drops the course. *Choose wisely. If you want a partner, start considering your classmates immediately... do not just partner up with your friend – try to pick someone who complements your strengths.*

Your project will be submitted via GitHub – *not D2L*. Your project GitHub repository will include:

- Documentation and README files all written in [Markdown](#).
- Source code along with detailed instructions how to clone and execute.
- A link to your video project presentation demonstrating your completed project.

Course Policies

Late Projects

Late work will be penalized by deducting 20% of its total grade per calendar day and will not be evaluated if submitted with more than 2 day's delay. Late work is penalized for two reasons: to be fair (all students must receive the same time limits) and to give me time to grade projects before the grade submission deadline.

If you have to miss a deadline for extraordinary reasons (e.g., personal illness, death in the family, etc.), you must inform me as soon as you can, indicating when you will submit the work. I will try to accommodate your needs. Documentation of extraordinary reasons is necessary.

Make-up Policy:

If a student must miss an exam due to a documented, legitimate reason (illness with an official doctor's note, family death, etc.), then a make-up test/exam will be administered. To coordinate this, contact me as soon as possible, preferably before the test is given. It is the responsibility of the student to coordinate this in a timely manner and provide documentation to support the absence.

Attendance:

You are expected to attend each class session, but I do not take attendance or treat you like a high school student. You are responsible for knowing about announcements made in class whether you are present. If you miss a

lecture, talk to your classmates and review D2L. There is no extra credit for attendance though you are more likely to be successful if you regularly attend.

This is a face-to-face course, so I will do not record the material except when I am unable to attend our regularly scheduled lectures. I will post an online lecture when I am unable to attend or if we have weather (or other) course interruptions. If you plan to miss a lecture, you might consider asking a classmate to record the lecture. Please do not email me asking for a summary or material for lectures you have missed.

Cell phones, games, and other ways to waste time in class:

I do not expect you to pay attention, but please be quiet and do not disturb your classmates. I recommend that you avoid distractions like social media during the lecture. You are adults and I will treat you like adults. That said, if you do not pay attention during class, you are more likely to perform poorly in the course and that is a poor use of your time and tuition. If you want to play games, watch videos, or do anything (even if you are quiet) that might distract a classmate sitting behind you, do it somewhere else.

Institutional Policies

Federal, BOR, & KSU Course Syllabus Policies:

http://curriculum.kennesaw.edu/resources/federal_bor_ksu_student_policies.php

Student Resources:

http://curriculum.kennesaw.edu/resources/ksu_student_resources_for_course_syllabus.php

Academic Integrity Statement:

<http://scai.kennesaw.edu/codes.php>

Withdrawal Policy

Please refer to the KSU Undergraduate Catalog

(<http://catalog.kennesaw.edu/content.php?catoid=24&navoid=2171&hl=Withdrawal&returnto=search#withdrawfromclasses>) The last day to withdraw without academic penalty is February 27, 2019. Ceasing to attend class or oral notice thereof DOES NOT constitute official withdrawal from the course. Students who simply stop attending classes without officially withdrawing usually are assigned failing grades. Students wishing to withdraw after the scheduled change period (add/drop) must obtain and complete a withdrawal form from the Academic Services Department in the Registrar's Office.

Academic Integrity Statement

Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section II of the Student Code of Conduct addresses the university's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to university materials, misrepresentation/falsification of university records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement. See also <http://www.kennesaw.edu/scai/content/ksu-student-code-conduct>.

Please note that all your work for this course is evaluated using the Turnitin tool provided by D2L. Plagiarism will not be tolerated; penalties range from a 0 on the assignment to academic misconduct charges that become part of your permanent record.

The provisions of the STUDENT CONDUCT REGULATIONS, II. Academic Honesty, KSC Undergraduate Catalog will be strictly enforced in this class.

KSU Student Resources

This link contains information on help and resources available to students:

https://curriculum.kennesaw.edu/resources/ksu_student_resources_for_course_syllabus.php

Writing Center

The KSU Writing Center helps students in all majors improve their writing. Experienced, friendly writing assistants help with topic development, revision, research, documentation, grammar, and more. For more information or to make an appointment, visit writingcenter.kennesaw.edu or stop by English Building, Room 242 (Kennesaw campus) or Building A, Room 184 (Marietta campus).

Communication Policies

- Announcements will be made on the home page of the course in D2L several times a week to keep you informed. Check in regularly.
- You are responsible for being aware of due dates on the calendar without being reminded.
- The instructor will only reply to e-mails that are sent from KSU student email accounts and list the course number in the subject line of the e-mail (SWE 3643).
- Do not use D2L e-mail. I do not check it. Ever.
- Any e-mail messages are responded to during the regular workweek, typically within a half days' time. Weekends and or holidays might delay the response time. I will post announcements if I will be unavailable via e-mail.
- E-mails received after 5:00 pm will not be answered until the following day.
- Because of the number of students we typically have, there may be some delay in the instructor's response to an individual's e-mail.
- Do not send time-sensitive information via e-mail. Speak to the instructor in person. A delivered e-mail does not relieve you of the responsibility of informing the instructor about some concern.
- Do not send a personal email correspondence to the instructor via the email class list.
- Changes to the posted schedule will be announced in the news pane of the course website. I will not re-publish a new schedule in the event the posted schedule is changed unless changes are significant.

Projected Schedule

This schedule is a guideline and will likely remain unchanged, but I do reserve the right to modify it as needed. Due dates are also posted in the D2L Course Calendar. Dates in the D2L calendar, dropboxes, or discussion forums supersede any due date shown in the **Projected Schedule**.

Week	Dates	Topics	Chapt er	Module	Quiz / Assignment
1	Mon, 8/12 Wed, 8/14	Introduction to Course What is Software Quality Introduction to Testing	1, 2	1	Syllabus Quiz
2	Mon, 8/19 Wed, 8/21	Test Management and Metrics	15.3- 6, 17	2	Quiz 1 Assignment 1
3	Mon, 8/26 Wed, 8/28	Code Coverage	3.3	3	Quiz 2
4	Mon, 9/2 Wed, 9/4	- No class 9/2, Labor Day Holiday	3	4	Quiz 3 Assignment 2
5	Mon, 9/9 Wed, 9/11	White Box Testing			

6	Mon, 9/16 Wed, 9/18	- No in person lecture on 9/16 & 9/18, video lectures will be posted	4	5	Quiz 4
7	Mon, 9/23 Wed, 9/25	Black Box Testing			
8	Mon, 9/30	Midterm review (in-class on 9/3) MIDTERM EXAM (ONLINE, no lecture on Wed 2/28) – Midterm can be taken between 10/1 and 10/4.			Quiz 5 Assignment 3
9	Mon, 10/7 Wed, 10/9	Software Test Automation JUnit, XUnit, PyUnit, etc.	16	6	Quiz 6
10	Mon, 10/16 Wed, 10/18	Integration Testing	5	7	Assignment 4
11	Mon, 10/23 Wed, 10/25	System and Acceptance Testing	6	8	Quiz 7
12	Mon, 10/30 Wed, 11/2	Other Testing Methods	8 & 10	9	Quiz 8 Assignment 5
13	Mon, 11/4 Wed, 11/6	Project Review (11/4) Project Work Day (11/6) - <i>No lecture, Jeff in classroom to assist groups</i>			
14	Mon, 11/11 Wed, 11/13	Project Work Days - <i>No lecture, Jeff in classroom to assist groups</i>			
15	Mon, 11/18 Wed, 11/20	Project Work Days - <i>No lecture, Jeff in classroom to assist groups</i>			Quiz 9
16	Mon, 11/25 Wed, 11/27	No class week of 11/25, Thanksgiving Holiday			
17	Mon, Dec 2	12/2 - LAST Project Work Day - <i>No lecture, Jeff in classroom to assist groups</i> - <i>Project due by 11:59 PM</i>			Project due Mon Dec 2 by 11:59 PM
	FINAL optional	Optional Final Exam Online via Respondus Complete between Dec 2-Dec 9			

KSU Fall 2024 Academic Calendar

<https://www.kennesaw.edu/registrar/academic-calendars/academic-calendar-fall-2024.php>

Religious Observance

I encourage students in promoting their spiritual health. Religiously observant students wishing to be absent on holidays that require missing class and/or exam should notify the instructor at least two weeks in advance and discuss acceptable ways of making up any work missed because of the absence. It is up to the student to be proactive and handle this early in the semester.

Academic Honesty

Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section II of the Student Code of Conduct addresses the University's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to University materials, misrepresentation/falsification of University records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of

alleged academic misconduct will be handled through the established procedures of the University Judiciary Program, which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement.

Students are required to work independently on quizzes and exams.

There are prior versions of this course's semester project floating around. I have a copy of every test/QA project ever submitted to me. Do not find out the hard way that I matched your code to a prior student's submission. So do your own work. I have a talent for remembering code I've read before (and I will read your code – that's an essential part of software engineering). If I match your submission to a prior submission, you will fail the course.

You can (and likely will) get away with academic dishonesty, but it is a waste of your time and money. I assure you that you will *not* be a successful software engineer if you cannot do this work. Cheating might get you a decent grade and out of this course, but it might also lead you to a much greater failure in your eventual career. Just do what you paid to do when you signed up for this course – learn the material by doing the work or consider studying something different that you actually enjoy.